

SEP 3 9 51 AM '03

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)	
)	
In the Matter of Petition of WorldCom, Inc.)	
Pursuant to Section 252(e)(5) of the)	CC Docket No. 00-218
Communications Act for Preemption of the)	
Jurisdiction of the Virginia State Corporation)	
Commission Regarding Interconnection)	
Disputes with Verizon Virginia Inc., and for)	
Expedited Arbitration)	
)	
In the Matter of Petition of AT&T)	
Communications of Virginia Inc., Pursuant to)	CC Docket No. <u>00-251</u>
Section 252(e)(5) of the Communications Act)	
for Preemption of the Jurisdiction of the)	
Virginia Corporation Commission Regarding)	
Interconnection Disputes With Verizon)	
Virginia Inc.)	

MEMORANDUM OPINION AND ORDER

Adopted: August 28, 2003

Released: August 29, 2003

By the Chief, Wireline Competition Bureau:

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I. INTRODUCTION

1. In this order, the Wireline Competition Bureau (the Bureau) resolves disputes regarding the rates that Verizon Virginia, Inc. (Verizon) may charge AT&T Communications of Virginia, Inc. (AT&T) and WorldCom, Inc. (WorldCom) for access to unbundled network elements (UNEs), interconnection, and resale. In two previous orders, the Bureau addressed the terms and conditions of interconnection agreements between the petitioners and Verizon.¹

¹ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Memorandum Opinion and Order, 17 FCC Rcd 27039 (2002) (*Non-Cost Arbitration Order*); *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Memorandum Opinion and Order, 17 FCC Rcd 19654 (2002) (*Non-Cost Arbitration Approval Order*). Although Cox Virginia Telecom, Inc. (Cox) petitioned for arbitration of certain terms and conditions, which the Bureau addressed in the *Non-Cost Arbitration Order* and the *Non-Cost Arbitration Approval Order*, Cox did not seek arbitration of rates. Therefore, as used in this order, the term “petitioners” or “AT&T/WorldCom” refers only to AT&T and WorldCom.

2. Following passage of the Telecommunications Act of 1996 (1996 Act),² the Commission adopted various rules to implement the legislatively mandated, market-opening measures that Congress put in place.³ Under the terms of the 1996 Act, it has been largely the job of the state public utility commissions to interpret and apply those rules through arbitration proceedings.⁴ In this proceeding, the Bureau, acting through authority expressly delegated by the Commission, stands in the stead of the Virginia State Corporation Commission (Virginia Commission) for the limited purpose of this arbitration.⁵ We expect that this order, combined with the two non-cost orders previously issued, will provide a workable framework to guide the commercial relationships between the interconnecting carriers before us in Virginia.

3. The parties to this consolidated proceeding have presented for decision numerous specific issues pertaining to the rates that Verizon may charge AT&T and WorldCom for access to UNEs, interconnection, and resale. These issues concern the application of the Commission's pricing rules now in effect, including the appropriate cost models to use to implement these rules and the appropriate algorithms, inputs, and other assumptions to use in these cost models. As we discuss more fully below, the parties filed cost models and testimony to support their respective proposed rates, filed rebuttal testimony opposing the cost models filed by the opposing party or parties, and conducted extensive discovery. Subsequently, we conducted extensive hearings at which both the petitioners and Verizon had full opportunity to present evidence and cross-examine opposing witnesses. We base our decisions in this order on the analysis of the record of these hearings, the evidence (including the pre-filed testimony) presented therein, and the subsequent briefing materials filed by the parties. Our application of existing Commission rules is narrowly tailored to the detailed evidence in the record before us, in order to resolve the numerous specific issues presented by the parties regarding their operations in Virginia.

4. Specifically, in this order, we apply the Commission's pricing rules to choose the best cost models presented to us and select the appropriate algorithms, network design assumptions, and inputs for use in the models. Based on these decisions, in this order we set recurring rates for unbundled loops and direct the parties to submit compliance filings consistent with this order for all other recurring and non-recurring charges (NRCs) at issue, and for the

² See Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996). We refer to the Communications Act of 1934, as amended by the 1996 Act and other statutes, as the Communications Act, or the Act. See 47 U.S.C. §§ 151 *et seq.*

³ See, e.g., *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, First Report and Order, 11 FCC Rcd 15499 (1996) (*Local Competition First Report and Order*) (subsequent history omitted).

⁴ See 47 U.S.C. § 252.

⁵ See 47 U.S.C. § 155(c)(1); see also *Procedures for Arbitrations Conducted Pursuant to Section 252(e)(5) of the Communications Act of 1934, as amended*, Order, 16 FCC Rcd 6231, 6233, paras. 8-10 (2001) (*Arbitration Procedures Order*) (delegating authority to the Bureau to conduct and decide these arbitration proceedings); *Non-Cost Arbitration Order*, 17 FCC Rcd at 27043-46, paras 3, 6-7.

resale discount.⁶ We will issue a subsequent order to address those compliance filings and to establish recurring charges for non-loop UNEs, NRCs, and the resale discount.

5. While we act in this proceeding under authority delegated by the Commission, the arbitration provisions of the 1996 Act require that we decide all issues fairly presented.⁷ The parties have asked us to arbitrate cost issues related to Verizon's provision of UNEs,⁸ and we resolve those issues here. We note that, after the record in this proceeding closed, the United States Court of Appeals for the District of Columbia Circuit issued the *USTA* decision, which overturned two Commission decisions relevant to Verizon's obligations in these areas.⁹ On February 20, 2003, the Commission adopted an order responding to the *USTA* decision.¹⁰ The unbundling and other rule changes called for in that order will become effective thirty days after publication of the order in the Federal Register, which has yet to occur.¹¹ Thus, our analysis of the issues raised in this proceeding does not reflect any rule changes resulting from the *Triennial Review Order*. However, we do take account of that order's limited clarification of existing rules regarding cost of capital and depreciation.¹² Finally, we note that, on October 8, 2002, the Bureau approved the parties' interconnection agreements, which gave practical effect to their legal rights and obligations.¹³ We leave it to the parties to implement, pursuant to the change of law provisions in their interconnection agreements, changes necessitated by the *USTA* decision and the *Triennial Review Order*.¹⁴

⁶ See *infra* section XIII.

⁷ See 47 U.S.C. § 252(b)(4)(C) (state commission shall resolve each issue in petition and response); *id.* § 252(c) (state commission shall resolve by arbitration any open issue).

⁸ See, e.g., Verizon Ex. 180 (Errata to Ex. 100, Parts C-9 and C-10), Tab D; AT&T/WorldCom Initial Cost Brief, at Apps. 1-2.

⁹ *United States Telecom Ass'n v. FCC*, 290 F.3d 415 (D.C. Cir. 2002) (*USTA*), *cert. denied*, 123 S. Ct. 1571 (2003). The effectiveness of the *USTA* decision was stayed by the court of appeals until February 20, 2003, the date the Commission's *Triennial Review Order* was adopted. See *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket Nos. 01-338, 98-147, and 96-98, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, FCC 03-36 (rel. Aug. 21, 2003) (*Triennial Review Order*).

¹⁰ See *Triennial Review Order*.

¹¹ See 5 U.S.C. § 553(d).

¹² See *Triennial Review Order*, paras. 680-84, 689-91.

¹³ See *Non-Cost Arbitration Approval Order*, 177 FCC Rcd at 19654.

¹⁴ See *id.*

II. PROCEDURAL MATTERS

A. History of the Proceeding

6. In this proceeding, we act in the place of the Virginia Commission. A full discussion of the events leading to preemption of the Virginia Commission and the procedural history preceding the filing of the cost studies and cost testimony on which this order relies can be found in the *Non-Cost Arbitration Order*.¹⁵

7. *Cost Studies and Pre-Filed Testimony.* On July 2, 2001, AT&T and WorldCom (AT&T/WorldCom) jointly filed recurring and non-recurring cost studies, which generated rates for UNEs, interconnection, and resale.¹⁶ Verizon also filed recurring and non-recurring cost studies at that time. Pursuant to the *Procedural Public Notice*, the cost studies were filed in electronic, as well as paper, formats.¹⁷ On July 31, 2001, AT&T/WorldCom and Verizon filed direct testimony in support of their respective cost studies. On August 27, 2001, AT&T/WorldCom and Verizon filed rebuttal testimony. The parties filed surrebuttal testimony on September 21, 2001. Verizon filed additional surrebuttal testimony on November 16, 2001.

8. Subsequent to filing its original cost studies, Verizon realized that there was a significant error in its switching cost study. On October 22, 2001, Verizon filed a revised switching cost study (dated October 18, 2001), along with revisions to some of its other cost studies, all of which were accompanied by supporting supplemental testimony. As part of this filing, Verizon submitted a revised rate sheet, which included revised proposed rates for switching, loops, and other UNEs. On November 5, 2001, Verizon submitted a further revised version of its switching cost study (dated November 2, 2001) to correct errors in the tandem switching part of its study. Verizon concurrently filed additional supporting supplemental testimony, which included revised rates for tandem switching, loops, some subloops, and common transport. On November 20, 2001, AT&T/WorldCom filed supplemental surrebuttal testimony responding to Verizon's revised cost studies and accompanying testimony. In addition, as a result of concessions made during the hearing, on December 12, 2001, AT&T/WorldCom submitted a revised version of its recurring UNE cost study.

¹⁵ See *Non-Cost Arbitration Order*, 17 FCC Rcd at 27042-47, paras. 1-10, 12-13. On March 27, 2001, we issued a letter ruling revising the procedural schedule, including separating cost issues from non-cost issues. See *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Letter Ruling (rel. March 27, 2001), *modifying Procedures Established for Arbitration of Interconnection Agreements Between Verizon and AT&T, Cox, and WorldCom*, CC Docket Nos. 00-218, 00-249, and 00-251, Public Notice, 16 FCC Rcd 3957 (2001) (*Procedural Public Notice*).

¹⁶ Because AT&T and WorldCom jointly filed cost studies and jointly filed most of their supporting testimony and post-hearing briefs, we generally refer to them collectively as AT&T/WorldCom. In instances in which either AT&T or WorldCom individually supports a position, that party will be referred to individually.

¹⁷ See *Procedural Public Notice* at 3-4.

9. *Discovery.* The *Procedural Public Notice* established general guidelines governing the discovery process. Pursuant to the schedule set by the Bureau, discovery began on May 31, 2001, and, after various extension requests from the parties, concluded for non-switching cost issues on September 26, 2001. In response to Verizon's revised switching cost studies, we permitted additional discovery on these filings. The parties were permitted to obtain discovery through document requests, interrogatories, oral depositions, and requests for admissions.

10. *Evidentiary Hearing.* The evidentiary hearing for cost issues, at which the parties submitted documentary evidence and, along with Bureau staff, examined witnesses, was held on October 22-25, 29-31, and November 1, 2001 for all cost issues other than switching, and on November 28-29, 2001 for switching costs and other issues affected by the filing of Verizon's revised cost studies. The hearing was transcribed, and a copy of the transcript was filed with the Secretary of the Commission for inclusion in the record.

11. *Post-Hearing Briefs.* The parties filed initial post-hearing briefs on cost issues, exclusive of switching costs, on December 21, 2001. The parties filed briefs on switching cost issues on January 17, 2002. Reply briefs on all cost issues were filed on January 31, 2002.

B. Outstanding Motions

12. As stated in the *Non-Cost Arbitration Order*, we apply several guiding principles in deciding procedural motions.¹⁸ First, we recognize the importance of a full and robust record to decide the unresolved issues presented by the parties. To that end, we generally rule on the side of allowing evidence offered by a party into the record and then according it the appropriate evidentiary weight. Next, we consider whether the parties were afforded a meaningful opportunity to examine and respond to the submission (*e.g.*, revised cost model inputs). Finally, we note that this is a flexible process, and we do not rule in a manner that deters parties from revising their proposals either to reflect agreement reached during the proceeding or to acknowledge and address the other parties' stated concerns.

1. Verizon's Motion for Leave to File Corrected Non-Recurring Cost Study and Errata to Testimony

13. On November 29, 2001, Verizon filed a motion for leave to submit a corrected version of its non-recurring cost study and errata to its non-recurring cost testimony.¹⁹ Specifically, Verizon seeks leave to make three filings. First, it seeks to make minimal corrections to the work times associated with a particular operations unit used in its non-

¹⁸ *Non-Cost Arbitration Order*, 17 FCC Rcd at 27049, para. 19.

¹⁹ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Motion for Leave to File Corrected Non-Recurring Cost Study and Errata to Testimony (filed Nov. 29, 2001) (Verizon NRCM Motion).

recurring cost study and to revise its proposed NRCs accordingly.²⁰ Verizon states that it provided the revised non-recurring cost study to petitioners on October 12, 2001.²¹ Second, Verizon requests leave to file errata to certain testimony so that the testimony identifies the source of certain work times used in the non-recurring cost study.²² Third, Verizon seeks to file a revised version of its non-recurring cost model which uses work times for a particular operations group from a year 2000 Anderson Consulting study rather than the 1999 Verizon study used in the original cost study.²³ Verizon states that it is not proposing that this revised study be used in place of its earlier study, but rather that it is filing this study should we prefer to use it.²⁴

14. We grant Verizon's motion and admit the corrected testimony and revised non-recurring cost studies. Neither AT&T nor WorldCom responded to the Verizon motion. Admitting these materials into the record is consistent with our goal of ensuring a complete and robust record. Moreover, we note that Verizon provided the corrected information and cost study to AT&T and WorldCom in advance of the hearings on these issues, and they therefore had the opportunity to cross-examine Verizon on, and otherwise respond to, these changes. Finally, grant of the motion does not itself determine the evidentiary weight, if any, that we will afford Verizon's submissions, which we address below when considering the merits of the relevant issues.

2. Verizon's Submission of Additional Record Evidence

a. Positions of the Parties

15. *September 2002 Filing.* On September 13, 2002, Verizon filed additional record evidence, including a declaration of Louis D. Minion.²⁵ In this filing, Verizon seeks to increase the Gross Revenue Loading Factor used in its annual cost factors (ACFs) to correct what Verizon contends are understated uncollectible revenues from competitive local exchange carriers (LECs) reflected in the original Gross Revenue Loading Factor.²⁶ Verizon claims that dramatic changes in market conditions necessitate the substitution of actual Verizon 2001 data

²⁰ *Id.* at 1-2, 5.

²¹ *Id.* at 2.

²² *Id.* at 1-2, 5, Attach. A.

²³ *Id.* at 1-5.

²⁴ *Id.* at 2, 4.

²⁵ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Verizon Virginia Inc.'s Submission of Additional Record Evidence (filed Sept. 13, 2002) (Verizon New Evidence Filing).

²⁶ Verizon New Evidence Filing at 1-2; Verizon New Evidence Filing, Declaration of Louis D. Minion at paras. 2-4, 8-10 (Verizon New Minion Decl.).

for the 1999 surrogate data originally included by Verizon in its cost studies.²⁷

16. On September 30, 2002, AT&T filed an opposition to Verizon's submission of additional evidence.²⁸ AT&T argues that we should reject Verizon's filing for three reasons. First, AT&T states that it would be procedurally inappropriate to admit new evidence well after the record has closed – 316 days after the hearings concluded and 225 days after the reply briefs were filed.²⁹ According to AT&T, none of the petitioners has had or will have the opportunity to respond to the new evidence proffered by Verizon short of our re-opening the proceeding for additional filings and hearings.³⁰ Second, AT&T argues that it would be inappropriate for the Bureau to re-open the record solely to address a single cost input.³¹ AT&T notes that cost inputs are continually changing, but cost proceedings analyze costs at a particular point in time; otherwise, the proceedings would never end.³² Finally, AT&T claims that the current high level of uncollectibles is a temporary situation, which therefore does not justify an increase in the costs recoverable in a long-run cost model.³³

17. *November 2002 and April 2003 Filings.* On November 22, 2002, Verizon filed a motion to permit the parties to supplement the record.³⁴ In this filing, Verizon claims that there have been significant legal and factual developments since the cost studies were filed and the hearings concluded, and that the Commission would benefit from hearing from the parties on these developments prior to rendering a decision.³⁵ In particular, Verizon argues that the decision of the United States Supreme Court in *Verizon v. FCC*,³⁶ the decisions of the United

²⁷ Verizon New Evidence Filing at 1-6; Verizon New Minion Decl. paras. 6-10.

²⁸ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Opposition of AT&T Communications of Virginia LLC to Verizon Virginia Inc.'s Submission of Additional Record Evidence (filed Sept. 30, 2002).

²⁹ *Id.* at 2, 4-6.

³⁰ *Id.* at 4, 6.

³¹ *Id.* at 2-3, 6-14.

³² *Id.* at 2, 6-8.

³³ *Id.* at 3, 15-18.

³⁴ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Verizon Virginia Inc.'s Motion to Permit Parties to Supplement the Record (filed Nov. 22, 2002) (Verizon Motion to Re-open the Record).

³⁵ *Id.* at 1-2, 7.

³⁶ 535 U.S. 467 (2002).

States Court of Appeals for the District of Columbia Circuit in *Competitive Telecommunications Ass'n v. FCC*³⁷ and in *United States Telecom Ass'n v. FCC*,³⁸ and the section 271 decisions of the Commission warrant additional filings by the parties to advise us of their relevance to this proceeding.³⁹ Verizon similarly argues that dramatic changes in the telecommunications market warrant additional filings by the parties to explain how these changes have affected key cost issues, most notably the cost of capital and uncollectibles.⁴⁰ Verizon claims that, because these legal and factual developments would be sufficient grounds for the Bureau to grant a reconsideration petition, it would be better to consider them prior to rendering a decision.⁴¹ To limit the scope of the supplemental proceeding, Verizon proposed the following procedural schedule: (1) two weeks after the record re-opens, each side could file up to 25 pages of briefs, 75 pages of testimony, and any necessary supporting documentation; (2) two weeks later, each side could file up to 25 pages of rebuttal briefs, 75 pages of rebuttal testimony, and any necessary supporting documentation; and (3) one week later, each side could file reply briefs.⁴²

18. AT&T and WorldCom each submitted oppositions to the Verizon motion to re-open the record.⁴³ They both allege that Verizon failed to present any legitimate reason to re-open the record and that Verizon, instead, seeks to delay the release of this order.⁴⁴ AT&T and WorldCom state that none of the court or Commission decisions cited by Verizon changed the law applicable to this proceeding.⁴⁵ AT&T also notes that the Bureau is capable of determining the impact, if any, of recent legal decisions.⁴⁶ AT&T further argues that new legal decisions fail

³⁷ 309 F.3d 8 (D.C. Cir. 2002).

³⁸ 290 F.3d 415.

³⁹ Verizon Motion to Re-open the Record at 1-5.

⁴⁰ *Id.* at 5-6.

⁴¹ *Id.* at 2-3 (citing 47 C.F.R. § 1.106(b)(2)(i)).

⁴² *Id.* at 8.

⁴³ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, *Opposition of AT&T Communications of Virginia LLC to Motion of Verizon Virginia Inc. to Supplement the Record* (filed Dec. 9, 2002) (AT&T Re-open Opposition); *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, *Opposition of WorldCom, Inc. to Verizon Virginia Inc.'s Motion to Permit Parties to Supplement the Record* (filed Dec. 9, 2002) (WorldCom Re-open Opposition).

⁴⁴ AT&T Re-open Opposition at 1; WorldCom Re-open Opposition at 1.

⁴⁵ AT&T Re-open Opposition at 2, 8-9; WorldCom Re-open Opposition at 2.

⁴⁶ AT&T Re-open Opposition at 2. AT&T, nevertheless, devotes the next several pages of its opposition to providing its interpretation of these decisions. *Id.* at 2-5.

to comprise “facts not previously presented” under the Commission’s reconsideration standards, even were such standards applicable to delaying agency action, which AT&T states they are not.⁴⁷ AT&T and WorldCom similarly claim that the parties introduced sufficient evidence into the record for the Bureau to render its decision without re-opening the record to admit additional evidence.⁴⁸ WorldCom, moreover, alleges that Verizon failed to allege any factual information that it could not have introduced during the hearing.⁴⁹ In addition, WorldCom notes that, costs will invariably change between the time a record is closed and the regulator sets rates.⁵⁰ This lag time, states WorldCom, is inherent in ratemaking and is a feature of the Commission’s total element long run incremental cost (TELRIC) pricing methodology that the Supreme Court has noted with approval.⁵¹ Finally, both AT&T and WorldCom claim that if the record were to be re-opened they would need considerably more time than Verizon proposes to determine which issues require additional testimony, and to seek discovery and to cross-examine Verizon’s witnesses.⁵² Re-opening the proceeding, petitioners therefore allege, would risk never reaching resolution.⁵³

19. Verizon responds to these oppositions by claiming that it does not desire delay, but rather seeks to ensure that the rates are not outdated upon adoption.⁵⁴ Legal and market conditions have changed since the hearing concluded, and it is not unusual for parties to provide the Commission with information on the impact of these sorts of changes.⁵⁵ Further, Verizon claims that imposing short time frames and page limits on any subsequent filings would minimize any delay caused by re-opening the record.⁵⁶ Finally, Verizon posits that, because AT&T and WorldCom argue that nothing has changed to warrant re-opening the proceeding, they would not raise new issues and it would, therefore, be a simple matter for AT&T and

⁴⁷ *Id.* at 8; *see* 47 C.F.R. § 1.106(c).

⁴⁸ AT&T Re-open Opposition at 5-7; WorldCom Re-open Opposition at 3-4.

⁴⁹ WorldCom Re-open Opposition at 1.

⁵⁰ *Id.* at 3-4.

⁵¹ *Id.* at 4 (citing *Verizon v. FCC*, 535 U.S. at 505-06).

⁵² AT&T Re-open Opposition at 4-7; WorldCom Re-open Opposition at 5.

⁵³ AT&T Re-open Opposition at 7; WorldCom Re-open Opposition at 5.

⁵⁴ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Verizon Virginia Inc.’s Reply to Oppositions of WorldCom Inc. and AT&T Communications of Virginia LLC to Motion of Verizon Virginia Inc. to Supplement the Record at 1 (filed Dec. 16, 2002).

⁵⁵ *Id.* at 1-2.

⁵⁶ *Id.* at 1, 3.

WorldCom to file within Verizon's suggested schedule.⁵⁷

20. On April 15, 2003, Verizon, on its own initiative, submitted a proffer of supplemental evidence, which was accompanied by four supplemental submissions of testimony and an additional cost study.⁵⁸

b. Discussion

21. We reject Verizon's submission of additional evidence⁵⁹ and deny its motion to re-open the record. As petitioners correctly note, rate cases must end,⁶⁰ or rates would never be set. Cost model input data invariably change during the pendency of a ratemaking case. This is not the rare situation where something new and unexpected has occurred; rather, it is the norm. Indeed, the Supreme Court expressly noted that TELRIC rates contain "built-in lags in price adjustments."⁶¹ Verizon itself, moreover, correctly stated elsewhere in this proceeding that cost model inputs necessarily are "snapshots" of the information known at the time a cost model is filed.⁶²

22. Although changing circumstances may, at some point, require a cost case to be re-opened, Verizon has failed to demonstrate that such circumstances are present here. First, with regard to court and Commission decisions issued since the record closed, we are fully capable of determining their impact on this proceeding. Second, with regard to alleged factual developments, Verizon failed to show new developments that it was unable to address during the hearings and subsequent briefing. For example, Verizon devoted over 30 pages of its post-hearing briefs and hundreds of pages of written testimony and exhibits to the issue of cost of capital.⁶³ The record thus contains sufficient information for us to render our decision on this issue without re-opening the record.

⁵⁷ *Id.* at 4.

⁵⁸ *Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration*, CC Docket Nos. 00-218, 00-249, and 00-251, Verizon Virginia Inc.'s Proffer of Supplemental Evidence (filed April 15, 2003) (Verizon Supplemental Proffer).

⁵⁹ Verizon did not file a motion for leave to submit additional evidence when it submitted the Verizon New Evidence Filing and the Verizon Supplemental Proffer. We do not treat these failures as dispositive in this instance, but rather will address Verizon's submissions as if the appropriate motion for leave had been filed.

⁶⁰ *See Commonwealth of Virginia, ex rel. State Corp. Comm'n v. Virginia Elec. and Power Co.*, 1988 WL 166804 at *12 (VA. Corp. Com.) (1988) ("Rate cases have to end."); *accord Old Dominion Elec. Coop. v. Virginia Elec. and Power Co.*, 237 Va. 385, 396 (1989).

⁶¹ *Verizon v. FCC*, 535 U.S. at 505.

⁶² *See* Verizon NRCM Motion at 4.

⁶³ *See* Verizon Initial Cost Brief at 42-55; Verizon Reply Cost Brief at 24-44.

23. Finally, we disagree with Verizon that the record could be re-opened without considerably delaying the conclusion of this proceeding. If we were to permit Verizon to submit additional testimony, supporting documentation, and briefs on issues that it asserts require updating, we would similarly need to permit AT&T and WorldCom to identify issues that they believe require updating. Contrary to Verizon's assertion, the mere fact that AT&T and WorldCom oppose re-opening the record does not mean that, if we granted Verizon's motion, they would not seek to file new evidence on distinct sets of issues. Further, the procedures under which we have conducted this arbitration have permitted discovery and cross-examination. It would be improper for us to allow new evidence into the record without providing the parties and staff the opportunity to examine the materials presented through discovery and cross-examination, particularly when this evidence includes testimony by a Verizon witness new to the proceeding⁶⁴ and a new cost study.⁶⁵

C. Standard of Review

24. Section 252(c)(2) of the Act requires that arbitrated rates be established in accordance with section 252(d).⁶⁶ In setting rates in this arbitration, the Commission's rules require that we utilize "final offer" or "baseball" arbitration.⁶⁷ We may depart from final offer arbitration if a final offer submitted by one or more parties fails to comply with the requirements of the Commission's rules, or if we determine that unique circumstances warrant another result because it would better implement the Act.⁶⁸ In such situations, the Bureau has discretion to direct the parties to submit new final offers or to adopt a result not submitted by any party that is consistent with section 252 of the Act and the Commission's rules adopted pursuant to that section.⁶⁹

25. Finally, we note briefly that, in addressing the parties' disputes, we attempt to dispose fully of the substantive issues that the parties have presented and to provide adequate direction on how the parties should memorialize our decision in the rate attachments to their interconnection agreements. As discussed above, our decision may take the form of adopting or rejecting a proffered position, or adopting one side's position in modified form. We emphasize,

⁶⁴ See Verizon Supplemental Proffer (Garzillo Supplemental).

⁶⁵ See Verizon Supplemental Proffer (Garzillo Supplemental), at 2-16 and attached CD-ROM.

⁶⁶ See 47 U.S.C. § 252(c)(2); 47 C.F.R. § 51.807(c)(2). See *infra* section III(A) for a discussion of the requirements of section 252(d); see also *Non-Cost Arbitration Order*, 17 FCC Rcd at 27053-56, paras. 29-35 (discussing the standard of review in an arbitration generally).

⁶⁷ See 47 C.F.R. § 51.807(b), (d). For purposes of this proceeding, we consider the positions taken by the parties in their briefs and in the last cost study filed to be their final offers.

⁶⁸ See 47 C.F.R. § 51.807(f)(3); *Arbitration Procedures Order*, 16 FCC Rcd at 6232, paras. 4-6.

⁶⁹ See *Non-Cost Arbitration Order*, 17 FCC Rcd at 27054, para. 30 (citing 47 C.F.R. § 51.807(f)(3); *Arbitration Procedures Order*, 16 FCC Rcd at 6232, para. 5).

however, that we have largely restricted ourselves to addressing the issues that the parties have directly placed at issue through their presentations during the hearings we conducted and through their post-hearing briefs. There may be instances in which we have not specifically spoken to a particular cost input or assumption because no party addressed it in its advocacy, although it may have appeared in the cost studies or opposing workpapers that the parties submitted.⁷⁰

D. True-Up

26. In the *Arbitration Procedures Order*, the Commission required that any arbitration award issued by the Bureau pursuant to delegated authority establishing rates for interconnection, resale, or UNEs must contain a requirement that the arbitrated interconnection agreements contain a true-up provision.⁷¹ This true-up provision will apply in the event that the Commission ultimately modifies any rates that we establish and must ensure that no carrier is disadvantaged by our orders in the event that they are subsequently modified by the Commission on review.⁷² Accordingly, in the event that the Commission, on review, establishes rates that differ from those established in this order or in any subsequent Bureau order addressing the parties' compliance filings,⁷³ any rates established by the Bureau shall be true-up to the rates ordered by the Commission. Any such true-up shall apply retroactively to the effective date of the Bureau's order adopting rates, which, as we explain below, shall be the effective date of our forthcoming order on the parties' compliance filings. Payment of the net true-up amount owed by the appropriate party to the interconnection agreement shall be made to the other party to the agreement in accordance with the billing practices and other relevant provisions delineated in the agreement. To the extent that there is a disagreement between the parties as to the amount of any such true-up or to the appropriate true-up procedures, such disagreement shall be subject to the dispute resolution provisions of the respective interconnection agreement.

III. OVERARCHING ISSUES

A. Economic Theory of TELRIC Pricing

27. Section 252(d)(1) provides that rates for interconnection and unbundled elements shall be "based on the cost (determined without reference to a rate-of-return or other rate-based proceeding) of providing the interconnection or network element" and "may include a reasonable profit."⁷⁴ As the Supreme Court noted, section 252(d)(1) is "radically unlike all previous

⁷⁰ For example, for UNEs other than loops, switching, transport, operations support systems, and the daily usage file, AT&T/WorldCom simply state that their proposed adjustments to Verizon's rates are contained in their workpapers. AT&T/WorldCom Ex. 12 (Recurring Cost Panel Rebuttal), at 95-96.

⁷¹ *Arbitration Procedures Order*, 16 FCC Rcd at 6233, para. 10.

⁷² *Id.*

⁷³ See *infra* section XIII.

⁷⁴ 47 U.S.C. § 252(d)(1).

statutes” and “appears to be an explicit disavowal of the familiar public-utility model of rate regulation . . . in favor of novel ratesetting designed to give aspiring competitors every possible incentive to enter local retail telephone markets, short of confiscating the incumbents’ property.”⁷⁵

28. In the *Local Competition First Report and Order*, the Commission adopted guidelines to be applied by state commissions when they are called on to arbitrate disputes regarding the prices for interconnection and unbundled network elements pursuant to section 252(d).⁷⁶ Specifically, the Commission adopted a forward-looking economic cost methodology, which it called “Total Element Long Run Incremental Cost” or “TELRIC.”⁷⁷ The Supreme Court affirmed the Commission’s TELRIC rules in *Verizon v. FCC*,⁷⁸ and it is those rules that we must apply in this arbitration proceeding.

29. The TELRIC of an element is the sum of three components – operating expenses, depreciation expense, and cost of capital:⁷⁹

- *Operating expenses* are the annual costs associated with operating a particular asset. As we explain in section III(E) below, we generally will calculate operating expenses by multiplying the *network investment* associated with a particular element by *ACFs*. We derive network investment through the use of cost models, which we describe in section III(B) below.
- *Depreciation* is the mechanism by which the network investment in an asset is recovered over the life of the asset. In describing the TELRIC methodology, the Commission stated that regulators should use “economic depreciation” that “reflects the true changes in economic value of an asset” in calculating depreciation expense.⁸⁰ We discuss depreciation in section III(D) below.
- *Cost of capital*, i.e., the cost of obtaining debt and equity financing, reflects the amount investors would demand to compensate for the risks of investing in the enterprise. In the *Local Competition First Report and Order*, the Commission stated

⁷⁵ *Verizon v. FCC*, 535 U.S. at 489.

⁷⁶ See generally *Local Competition First Report and Order*, 11 FCC Rcd at 15812-83, paras. 618-766; 47 C.F.R. §§ 51.501 – 51.511. The Commission also concluded that rates for reciprocal compensation under section 252(d)(2) should be based on the same principles. *Local Competition First Report and Order*, 11 FCC Rcd at 16023, para. 1054.

⁷⁷ *Id.* at 15844, para. 672.

⁷⁸ 535 U.S. at 467.

⁷⁹ See *Local Competition First Report and Order*, 11 FCC Rcd at 15856, para. 703.

⁸⁰ *Id.*

that regulators should adjust the cost of capital to reflect the risks faced by the incumbent as competition is introduced into its local market.⁸¹ We discuss cost of capital in section III(C) below.

30. Based on the Commission's finding that prices in a competitive market will tend toward long-run incremental cost,⁸² the TELRIC methodology is designed to derive prices for particular elements in the incumbent LEC's network that "replicate[, to the extent possible]" what the incumbent LEC would be able to charge in a competitive market.⁸³ Specifically, TELRIC equates the current market value of the existing network of an incumbent telecommunications provider with the cost the incumbent would incur today if it built a local network that could provide all the services its current network provides to meet reasonably foreseeable demand using the least-cost, most-efficient technology currently available.⁸⁴ The Commission's decision to equate the current value of existing equipment with the forward-looking cost of currently available equipment "rests on the rational economic assumption that, as new more efficient equipment becomes available, the value of older, less efficient equipment will be affected."⁸⁵

31. In the *Triennial Review Order*, the Commission clarified the existing rules with respect to two key components of TELRIC – cost of capital and depreciation.⁸⁶ The Commission made clear that, in establishing a TELRIC-based cost of capital, state commissions must reflect the risk of participating in a market with facilities-based competition.⁸⁷ With respect to depreciation, the Commission declined to mandate a particular set of asset lives. The Commission did, however, clarify that it was appropriate for state commissions to employ accelerated depreciation in order to reflect accurately the anticipated decline in value of assets in a competitive market.⁸⁸

⁸¹ *Id.*

⁸² *See id.* at 15845, para. 675.

⁸³ *Id.* at 15846, para. 679.

⁸⁴ *See id.* at 15848-49, para. 685. The Commission added one constraint on the design of the network: the new network must take as given the existing wire center locations. *Id.* at 15848-49, para. 685.

⁸⁵ Reply Brief for Petitioners United States and Federal Communications Commission at 8, *Verizon Communications, Inc. v. FCC*, 535 U.S. 467 (2002) (Nos. 00-511, 00-555, 00-587, 00-590, 00-602) (FCC Reply Brief). As the Supreme Court noted, "what the incumbents call the 'hypothetical' element is simply the element valued in terms of a piece of equipment an incumbent may not own." *Verizon v. FCC*, 535 U.S. at 501.

⁸⁶ *Triennial Review Order*, paras. 680-83, 689-90.

⁸⁷ *Id.* at para. 680.

⁸⁸ *Id.* at para. 690.

32. In applying the UNE pricing rules, we are mindful of the Supreme Court's finding that TELRIC does not require an assumption of a perfectly competitive or perfectly efficient market.⁸⁹ Accordingly, in calculating rates under TELRIC, we do not need to assume that one or more hypothetical ubiquitous facilities-based competitors exist today. Rather, consistent with the approach adopted in 1996, TELRIC requires us to assume that, in the long run,⁹⁰ the existence of widespread facilities-based competition (and the corresponding erosion of the incumbent LEC's market power) will constrain the pricing of UNEs. Similarly, we interpret the requirement to use the "most efficient technology currently available" to mean that the incumbent LEC and its competitors will deploy current technology over a period of time and, in the long run, this technology will be deployed ubiquitously. The assumption that competition will drive incumbent LECs to deploy new technology is fully consistent with the empirical evidence cited by Verizon witness Shelanski.⁹¹

33. We decline to consider Verizon's proposal that the appropriate network assumptions reflect only technology deployment that is planned over the next three to five year period.⁹² The *Local Competition First Report and Order* states that UNE rates shall reflect "long run" costs, meaning "a period long enough that all costs are treated as variable and avoidable."⁹³ To our knowledge the Commission's rules and orders do not otherwise address whether the period proposed by Verizon meets this standard, and Verizon has not demonstrated in the context of this proceeding that its proposal complies with the Commission's current requirements. Verizon's proposal therefore is beyond the scope of this proceeding.

34. We agree with Verizon that it is rational for a company to continue to use capital equipment that is no longer state-of-the-art. The TELRIC rules, however, recognize that the value of such equipment in a competitive market will be no higher than the market value of newer, more efficient equipment that performs the same functions.⁹⁴ In other words, even if

⁸⁹ See *Verizon v. FCC*, 535 U.S. at 504.

⁹⁰ See *Local Competition First Report and Order*, 11 FCC Rcd at 15845, 15851, paras. 677, 692. The long run approach "ensures that rates recover not only the operating costs that vary in the short run, but also fixed investment costs that, while not variable in the short term, are necessary inputs directly attributable to providing the element." *Id.* at 15851, para. 692.

⁹¹ Verizon Ex. 101 (Shelanski Direct), at 17. Specifically, Dr. Shelanski's testimony cites an article he published in 2000 which concluded that there is a "positive correlation between competition and adoption of new technology." Howard A. Shelanski, *Competition and Deployment of New Technology in U.S. Telecommunications*, 2000 U. CHI. LEGAL F. 85 (2000); *id.* at 115 ("When deployment times and market structures are matched, faster deployment times correlate with more competitive markets. . . . [A]verage deployment times speed up as markets become more competitive.").

⁹² See, e.g., Verizon Ex. 101, at 16-29.

⁹³ See *Local Competition First Report and Order*, 11 FCC Rcd at 15851, para. 692; see also 47 C.F.R. §51.505(b).

⁹⁴ FCC Reply Brief at 8-9.

there are valid reasons for Verizon not to deploy particular equipment, the prices Verizon could charge for network elements in a competitive market still would be affected by the deployment of more efficient equipment unless there are reasons why no carrier would deploy the particular equipment.

B. Selection of a Recurring Cost Model

35. In order to establish the recurring rates that Verizon may charge petitioners, we resolve two critical categories of issues. First, as states usually have done in these arbitrations, we determine the appropriate cost model(s) to use to generate rates. Second, we determine the appropriate inputs and assumptions (*e.g.*, network design assumptions, investment inputs) to be used in the cost model(s). We address generally the modeling issue here; we will address it in greater detail, together with the input issues, in the sections specific to individual UNEs.⁹⁵

36. Both AT&T/WorldCom and Verizon submitted recurring cost models. We analyze the parties' proposed cost models for access to UNEs and interconnection⁹⁶ and apply the baseball arbitration rules discussed above⁹⁷ in order to choose between the parties' competing cost model proposals. So long as the cost model sponsored by one side for a particular UNE or method of interconnection comports with the requirements discussed herein, we are required to consider that model a valid option for generating rates. If both sides propose competing models, and if both models generally comport with our basic requirements, then we will adopt the model that more fully complies with the Commission's costing rules and principles. Thus, although none of the proposed cost models may represent the perfect model, we will use the model presented that best complies with Commission rules and precedent.

1. Introduction

37. We establish rates in this arbitration through the use of economic cost models.⁹⁸ In the *Local Competition First Report and Order* and the rules promulgated thereby, the Commission provided general guidance regarding the type of economic cost model(s) necessary to generate rates for access to UNEs and interconnection. Most important, a cost model must be consistent with the TELRIC methodology.⁹⁹ This methodology requires that rates be determined

⁹⁵ See *infra* sections IV (loops), V (switching), VI (transport), VII (access to OSS), and VIII (DUF).

⁹⁶ Because the legal standard for establishing the wholesale discount for resold incumbent LEC services is governed by a separate, independent standard, we analyze this issue separately, *infra*, in section XII. Compare 47 U.S.C. § 252(d)(3) with 47 U.S.C. § 252(d)(1), (2).

⁹⁷ See *supra* section II(C).

⁹⁸ See *Local Competition First Report and Order*, 11 FCC Rcd at 15850-56, at paras. 690-703; 47 C.F.R. § 51.505(e).

⁹⁹ 47 C.F.R. § 51.505(e); see also 47 C.F.R. §§ 51.501 *et. seq.*

based on the forward-looking economic costs of the UNE or method of interconnection,¹⁰⁰ assuming a network design that uses the least-cost, most efficient technology currently available, but also assuming the existing wire center locations of the incumbent LEC.¹⁰¹ Specifically, the rates for each UNE must equal the forward-looking long-run costs of the total quantity of the UNE (based on current and reasonably projected future demand) that are directly attributable to, or reasonably identifiable as incremental to, the element, plus a reasonable allocation of forward-looking common costs.¹⁰² Embedded costs (including those in the incumbent LEC's book of accounts), retail costs, opportunity costs, and revenues used to subsidize other services may not be considered when determining the forward-looking economic cost of a UNE.¹⁰³ As discussed above,¹⁰⁴ by basing UNE costs on forward-looking economic costs, the Commission sought to replicate the prices that would exist in a competitive market.¹⁰⁵ The Commission thus adopted a pricing methodology that would send appropriate signals for competitive entry and investment.¹⁰⁶

38. Subsequently, in the universal service proceeding, the Commission provided additional guidance regarding the proper criteria for forward-looking cost methodologies. In particular, the Commission delineated ten criteria that should be used in making forward-looking economic cost determinations.¹⁰⁷ Some of these criteria offer specific guidance on developing forward-looking cost models. Notably, a cost model "must include the capability to examine and modify the critical assumptions and engineering principles."¹⁰⁸ Underlying data must be verifiable, network design assumptions must be reasonable, and model outputs must be plausible.¹⁰⁹ All data, formulas, and other aspects of the models must be made available to other

¹⁰⁰ Unless otherwise indicated in this order, the Commission rules and orders that delineate pricing standards apply equally to establishing rates both for access to UNEs and for methods of interconnection. To simplify the drafting, however, we will generally refer only to UNEs in the text of this order.

¹⁰¹ 47 C.F.R. § 51.505(b).

¹⁰² 47 C.F.R. §§ 51.505(a)-(c).

¹⁰³ 47 C.F.R. § 51.505(d). Some historic cost information may, however, be probative of forward-looking costs and may be considered for that purpose.

¹⁰⁴ See *supra* section III(A).

¹⁰⁵ See *Local Competition First Report and Order*, 11 FCC Rcd at 15846-15847, para. 679.

¹⁰⁶ See *Local Competition First Report and Order*, 11 FCC Rcd at 15844, 15848-89, paras. 672, 685; Brief for Petitioners United States and Federal Communications Commission at 11, *Verizon Communications, Inc. v. FCC*, 535 U.S. 467 (2002) (Nos. 00-511, 00-555, 00-587, 00-590, 00-602) (FCC Brief); see also *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, First Report and Order, 12 FCC Rcd 8776, 8899, para. 224 (1997) (*Universal Service First Report and Order*), as corrected by *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, FCC 97-157, Errata (rel. June 4, 1997) (subsequent history omitted).

¹⁰⁷ *Universal Service First Report and Order*, 12 FCC Rcd at 8912-16, para. 250.

¹⁰⁸ *Id.* at 8915, para. 250(9).

¹⁰⁹ *Id.* at 8915, para. 250(8).

parties for their evaluation.¹¹⁰ In other words, a cost model must be transparent and verifiable.

39. The Commission applied these various criteria to develop a cost model – the Synthesis Model (SM) – for use in determining universal service support.¹¹¹ This is the only instance in which the Commission has directly applied forward-looking costing principles to create a cost model. In the *Platform Order*, the Commission adopted network architecture, including outside plant, switching, and interoffice network assumptions, for use in a forward-looking cost model.¹¹² In so doing, the Commission noted that loop costs were more important than switching costs for universal service purposes,¹¹³ and it therefore devoted considerably more analysis to determining outside plant architecture than central office and interoffice plant architectures.¹¹⁴ Subsequently, in the *Inputs Order*, the Commission made key determinations regarding the particular inputs to the model.¹¹⁵

2. Positions of the Parties

40. Verizon proposes rates for each of the UNEs that it offered petitioners as of the date it submitted its cost studies.¹¹⁶ These UNEs include loops (of varying capacities), subloops, the network interface device (NID), digital subscriber line technology (commonly referred to as xDSL) loop qualification, enhanced extended link testing, line sharing options, transport (common, dedicated, and dark fiber), entrance facilities, switching, signaling, call-related databases, customized routing, daily usage files (DUF), service messaging systems, and operations support systems (OSS).¹¹⁷

41. Verizon submitted myriad cost studies to generate rates for these UNEs.¹¹⁸ For

¹¹⁰ *Id.*

¹¹¹ See *Federal-State Joint Board on Universal Service*, CC Docket Nos. 96-45 and 97-160, Fifth Report and Order, 13 FCC Rcd 21323 (1998) (*Platform Order*); *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Tenth Report and Order, 14 FCC Rcd 20156 (1999) (*Inputs Order*), *aff'd* *Qwest Corp. v. FCC*, 258 F.3d 1191 (10th Cir. 2001).

¹¹² See generally *Platform Order*, 13 FCC Rcd 21323.

¹¹³ *Id.* at 21354-55, para. 75.

¹¹⁴ Compare *id.* at 21335-53, paras. 26-70 (discussion of loop model platform), with *id.* at 21353-57, paras. 71-80 (discussion of switching and interoffice platform).

¹¹⁵ See generally *Inputs Order*, 14 FCC Rcd at 20156. The model adopted by the Commission is called the “Synthesis Model” because, in developing the platform and inputs to determine forward-looking loop costs, the Commission melded the best aspects of the different cost models presented to it. See *id.* at 20162-63, para. 8.

¹¹⁶ See Verizon Ex. 100 (Cost Study), Summary of Costs.

¹¹⁷ See *id.*; Verizon Ex. 107 (Recurring Cost Panel), at 15.

¹¹⁸ See Verizon Ex. 100P (Cost Study), Vols. I-VIII, XI-XII, XV-XVI (confidential version).

loops (excluding DS-3 loops), switching, and signaling, Verizon submitted computer cost models. For loops Verizon submitted a cost study that includes its Loop Cost Analysis Model (LCAM), for switching Verizon submitted a cost study that includes Telcordia™ Technologies, Inc.'s (Telcordia) Switching Cost Information System (SCIS) model, and for signaling Verizon submitted Telcordia's Common Channel Signaling Cost Information System model.¹¹⁹ For other UNEs, including transport, Verizon submitted individual spread sheet-based studies.¹²⁰ Some of the spread sheet studies submitted by Verizon also rely, in part, on the LCAM or SCIS computer models. For example, the subloop cost studies (excluding DS-3 subloop feeder) rely in part on the LCAM.¹²¹ We describe the Verizon cost studies for individual UNEs in more detail in the sections of this order that address those UNEs.

42. Verizon claims that it applied TELRIC principles in the network configuration and investment inputs used in its cost studies.¹²² In particular, Verizon explains that it designed its studies generally to determine UNE costs based on the costs that Verizon anticipates it will incur at the end of its three-year study period based on the technology mix that it actually deploys in new growth areas today.¹²³ In so doing, Verizon used as its starting point its existing network configuration in Virginia.¹²⁴ Verizon then adjusts its technology assumptions for this network to represent the mix of technologies that Verizon deploys today in new growth areas.¹²⁵ In applying forward-looking adjustments to its existing network based on current engineering and deployment guidelines, Verizon maintains that, even on an efficient, forward-looking basis, Verizon will continue to be constrained by its existing network and investments.¹²⁶

43. In developing its cost studies, Verizon first identified its material investments on a per available unit basis.¹²⁷ For its switching study only, it determined investments based on the percentage of expenditures on entirely new (or replacement) switches and on growth and upgrade switch equipment, and the vendor discount associated therewith.¹²⁸ In its various cost studies, Verizon applied utilization (*i.e.*, fill) factors to the material investments to determine

¹¹⁹ *Id.*, Vols. I-III, V-VI, XI, XV (confidential version); Verizon Ex. 107, at 31.

¹²⁰ *See, e.g.*, Verizon Ex. 100P, Vol. VI, Part C-9, Vol. VII, Part D-2 (confidential version).

¹²¹ *See id.*, Vols. IV, Part B-8, Section 1.3.

¹²² *See, e.g.*, Verizon Ex. 107, at 16; Verizon Initial Cost Brief at 2-3, 10-19; Verizon Reply Cost Brief at 1-11.

¹²³ *See* Verizon Initial Cost Brief at 2, 12; *see also* Verizon Ex. 107, at 17, 23-30.

¹²⁴ *See* Verizon Ex. 107, at 29-30.

¹²⁵ *See id.* at 16; Verizon Initial Cost Brief at 12.

¹²⁶ *See* Verizon Ex. 101, at 6-7; Verizon Initial Cost Brief at 2-3, 10-11, 20-21; Verizon Reply Cost Brief at 2-4.

¹²⁷ Verizon Ex. 107, at 17.

¹²⁸ *Id.* at 187-194; Verizon Ex. 122 (Recurring Cost Panel Surrebuttal), at 166-173.

those investments on a per unit in service basis.¹²⁹ Verizon then applied investment loading factors to these costs to account for engineering and installation costs, thereby determining the total installed investments.¹³⁰ Verizon calculated the forward-looking costs by applying ACFs to these total investments.¹³¹

44. AT&T/WorldCom challenge Verizon's cost studies, claiming that they fail to comply with TELRIC principles.¹³² They claim that the Verizon cost studies inappropriately "take as a given Verizon's existing network in all its particulars,"¹³³ rather than assuming only the existing Verizon wire center locations.¹³⁴ Thus, AT&T/WorldCom argue that the Verizon studies are not designed to comply with TELRIC principles, but rather to recover Verizon's embedded costs.¹³⁵ In addition, AT&T/WorldCom contend that Verizon's studies, particularly the LCAM and the SCIS computer models, are neither transparent nor verifiable. In particular, they allege that inputs often are not documented and crucial algorithms are not subject to change by the model user.¹³⁶

45. AT&T/WorldCom submitted their own recurring cost model to generate rates for the 2-wire loop, common transport, switching, and signaling network elements.¹³⁷ Specifically, AT&T/WorldCom filed a modified version of the SM, which the Commission developed through a series of orders in the universal service proceeding.¹³⁸ AT&T/WorldCom term their cost model the Modified Synthesis Model (MSM). In most respects, including in particular the model's central design algorithms, the MSM remains the same model as that adopted by the Commission in the universal service proceeding.¹³⁹ For example, just as the original SM begins designing outside plant by assuming the existing incumbent LEC wire center locations and by using road surrogate data to locate customers, so does the MSM. Both models then use

¹²⁹ Verizon Ex. 107, at 34.

¹³⁰ *Id.* at 17.

¹³¹ *Id.*

¹³² *See, e.g.,* AT&T/WorldCom Initial Cost Brief at 13-21.

¹³³ *Id.* at 13.

¹³⁴ *Id.*

¹³⁵ *Id.* at 13-14.

¹³⁶ *See id.* at 46-48.

¹³⁷ *See* AT&T/WorldCom Ex. 1 (Pitkin Direct), at 1-2; AT&T/WorldCom Ex. 23 (Cost Study); AT&T/WorldCom Initial Cost Brief at 26-36.

¹³⁸ AT&T/WorldCom Initial Cost Brief at 26-36. *See, e.g.,* *Universal Service First Report and Order*, 12 FCC Rcd at 8776; *Platform Order*, 13 FCC Rcd at 21323; *Inputs Order*, 14 FCC Rcd at 20156.

¹³⁹ *See* AT&T/WorldCom Initial Cost Brief at 26-36.

algorithms to determine efficient outside plant routes to connect the customer locations to the wire center locations.¹⁴⁰ Although the MSM is substantially the same in construct as the underlying SM, AT&T/WorldCom made certain platform and cost input changes to the loop module, designed, they assert, to improve the model.¹⁴¹ The switching and transport module of the MSM, and the calculations contained therein, remain the same as in the SM.¹⁴²

46. Unlike the Verizon studies, however, the MSM generates rates for only a subset of the UNEs at issue in this proceeding. AT&T/WorldCom did not submit additional cost models to generate rates for the remaining universe of UNEs that Verizon makes available. Instead, they propose applying out-of-model calculations to the 2-wire loop costs determined by the MSM to generate rates for the 4-wire, DS-1, and DS-3 loop types.¹⁴³ For all other UNEs, AT&T/WorldCom propose corrections to Verizon's cost studies to restate the Verizon proposed rates.¹⁴⁴

47. Verizon opposes the use of the MSM for generating UNE rates.¹⁴⁵ First, Verizon claims that AT&T/WorldCom's theory of "repeated, instantaneous, and complete network replacement" is neither economically correct nor required by TELRIC.¹⁴⁶ Verizon argues that AT&T/WorldCom's assumption of the existence of carriers capable of instantaneous and ubiquitous deployment of new technology and network design results in a model network that no carrier – neither Verizon nor any competitor – would ever deploy.¹⁴⁷ It claims that forward-looking costs should be based on efficiencies that are actually attainable, rather than unattainable, hypothetical costs.¹⁴⁸ Second, Verizon argues that the Commission has stated previously that any version of the universal service SM is inappropriate to use for determining UNE costs.¹⁴⁹ Third, Verizon challenges key aspects of the MSM as unverifiable.¹⁵⁰ Finally,

¹⁴⁰ See *infra* section IV(B).

¹⁴¹ These changes include correcting implementation errors, updating vintage data, changing the common support calculations, and incorporating certain input changes. See AT&T/WorldCom Initial Cost Brief at 32-36. These changes are discussed, *infra*, in sections III(E)(2)(b), IV(B).

¹⁴² See Verizon Switching Cost Brief at 26 (citing Tr. at 5193-94).

¹⁴³ See AT&T/WorldCom Ex. 1, at 1-23; AT&T/WorldCom Initial Cost Brief at 36, 167.

¹⁴⁴ See AT&T/WorldCom Ex. 12, at 1-171.

¹⁴⁵ See, e.g., Verizon Initial Cost Brief at 133-50.

¹⁴⁶ *Id.* at 19-23; see also Verizon Reply Cost Brief at 1-3, 10-11.

¹⁴⁷ See, e.g., Verizon Initial Cost Brief at 19-23; Verizon Reply Cost Brief at 12.

¹⁴⁸ See Verizon Initial Cost Brief at 2-3, 10-11, 20-21; Verizon Reply Cost Brief at 2-4.

¹⁴⁹ See Verizon Ex. 108 (Tardiff Rebuttal), at 7-8, 13-14; Verizon Ex. 109 (Murphy Rebuttal), at 47; Verizon Initial Cost Brief at 137-42.

¹⁵⁰ See Verizon Ex. 109, at 118; Verizon Initial Cost Brief at 148-49.

Verizon claims that it is inappropriate to use the MSM because the MSM does not model all of the UNEs that Verizon provides.¹⁵¹

3. Discussion

48. Commission precedent provides a number of criteria to guide our choice of cost models. First, any cost model we use should be consistent with TELRIC pricing principles (*i.e.*, it should be designed to calculate the cost of a network that uses the most efficient technology available, taking as a given the existing incumbent LEC wire centers).¹⁵² Second, the model should be transparent.¹⁵³ That is, the logic and algorithms of the cost study should be revealed, understandable, capable of being adjusted by the parties and regulators, and not contain “black boxes.” For example, if a cost model were presented in an electronic spreadsheet format, but all the formulas were concealed so that the regulator and other parties could not ascertain the underlying assumptions, the model would not be transparent. Third, any assumptions contained in the model should be verifiable.¹⁵⁴ Any data used to estimate costs should either be derived from public sources, or capable of verification and audit without undue cost or delay. Both sides claim that the models they have submitted in this proceeding satisfy these three criteria.

49. We find that the MSM better meets these three criteria for loops and that the Verizon cost studies better meet these criteria for switching, signaling, and transport. At the outset, we note that we do not find any of the cost models before us fundamentally inconsistent with forward-looking pricing principles. Rather, as we explain in this section and in the sections pertaining to each individual UNE, we adopt the cost model for a particular UNE that is more: (1) consistent with the Commission’s TELRIC rules; (2) transparent and adjustable; and (3) verifiable.¹⁵⁵

50. As a threshold matter, we note that the underlying SM was designed and approved by the Commission, in part, specifically because it met these three criteria.¹⁵⁶ The modifications made by AT&T/WorldCom do not affect the model’s compliance with these criteria. First, the MSM is consistent with TELRIC principles because it attempts to model the most efficient technology available, while assuming the location of existing Verizon wire center locations. Second, the MSM is generally transparent. The SM has been available publicly for

¹⁵¹ See Verizon Initial Cost Brief at 137-38.

¹⁵² See 47 C.F.R. §§ 51.501-51.511; *Local Competition First Report and Order*, 11 FCC Rcd at 15844-56, paras. 672-703.

¹⁵³ See *Universal Service First Report and Order*, 12 FCC Rcd at 8912-16, para. 250.

¹⁵⁴ See *id.*

¹⁵⁵ See *infra* sections IV(B), V(A), and VI(A).

¹⁵⁶ See *Platform Order*, 13 FCC Rcd at 21325, 21327-31, 21342-43, 21345-46, 21349-50, paras. 4, 9-12, 15, 44-46, 53-54, 66; *Inputs Order*, 14 FCC Rcd at 20168-69, 20171, paras. 21-25, 29.

years for use in the universal service context, and the underlying algorithms and formulas have all been subject to review by many parties. Most of the algorithms and formulas that the MSM uses are identical to those in the SM. The modifications to the loop module of the MSM that AT&T/WorldCom propose in this proceeding were made available for examination by Verizon and Commission staff. Third, the assumptions in the MSM are verifiable. AT&T/WorldCom generally rely on public data for model inputs and, where no public data were available, they rely on data previously examined by the Commission following a period of public comment. For example, the line count data that AT&T/WorldCom propose to use in the loop module of the MSM are based on Verizon's Automated Reporting Management Information System (ARMIS) data, while the customer location data (for which there is no publicly available source of updated data) are the same data used by the Commission in the SM.

51. Verizon's criticisms of the MSM as an inappropriate TELRIC model fail to undermine a finding that the MSM satisfies these core model criteria. Verizon essentially claims that no version of the SM is capable of being used to generate UNE rates.¹⁵⁷ Verizon's allegation that the Commission has stated that the SM should not be used to generate UNE rates¹⁵⁸ goes too far. In the universal service *Inputs Order*, the Commission cautioned parties against using the nationwide input values, which the Commission adopted for universal service cost comparison purposes, in developing UNE rates.¹⁵⁹ The Commission, however, did not state that the model platform would be inappropriate for use in setting UNE rates.¹⁶⁰ To the extent there are disputes over the appropriate inputs to use in the MSM, we address those issues individually in the loop section of this order.¹⁶¹

52. With respect to loops, Verizon's cost study does not meet the model criteria as well as the MSM loop module does. In contrast to the MSM, the Verizon recurring loop cost study is not an economic cost model; it is an engineering cost study based on the Verizon network that exists, or existed in the past, in Virginia, presented in electronic database or spreadsheet formats. For example, Verizon uses a survey from 1993 to 1995 to estimate an average loop length for specific distribution areas (DAs) or groups of DAs.¹⁶² For other cost study assumptions, such as structure sharing, fill factors, and plant routes, Verizon also uses figures based solely on its actual experiences and network design.¹⁶³ Because of Verizon's extensive use of historical network design and data, its loop cost studies are not as consistent as the MSM loop

¹⁵⁷ See Verizon Initial Cost Brief at 139-40.

¹⁵⁸ See *id.*

¹⁵⁹ See *Inputs Order*, 14 FCC Rcd at 20172, para. 32.

¹⁶⁰ See *infra* section IV(B)(2).

¹⁶¹ See *infra* section IV(C).

¹⁶² See *infra* section IV(B)1.

¹⁶³ See *infra id.*

module with the Commission's TELRIC rules, which require "use of the most efficient telecommunications technology currently available and the lowest cost network configurations," limited only by existing wire center locations.¹⁶⁴

53. There are, moreover, serious issues of transparency and verifiability with the Verizon study, and in particular with the LCAM module. For example, it is not always possible for a third party to adjust the inputs or formulas (e.g., line count data cannot be adjusted in Verizon's loop model).¹⁶⁵ Nor did Verizon provide the underlying source material for all of its inputs. For instance, Verizon has not submitted the loop studies that form the basis for its estimates of the average loop length per wire center, nor has it presented any detailed statistical summary of these loop studies.¹⁶⁶

54. For similar reasons, we select the Verizon switching cost study, including the SCIS model, to determine switching costs instead of the MSM. The Verizon switching study better satisfies the Commission's TELRIC rules, in part, because it relies on more recent data than does the MSM.¹⁶⁷ AT&T/WorldCom rely on the SM switch cost inputs that were derived from 1989-1996 switching data.¹⁶⁸ Verizon, in contrast, uses switching data from 1996-2000, the most recent data then available.¹⁶⁹

55. The Verizon switching cost study is also more transparent, adjustable, and verifiable than is the MSM switching module.¹⁷⁰ The most important switching cost inputs are the switch discounts – both the percentage of new versus growth switch equipment and the size of the vendor discounts applicable to each type of switch.¹⁷¹ As we explain *infra* in the switching section, we find that neither side proposes appropriate new versus growth switch equipment assumptions.¹⁷² We therefore determine independently the appropriate percentages of new and growth switch equipment. Only the SCIS model, and not the MSM, permits the user to modify the growth versus new switch percentages and associated vendor discounts. Further, the specific vendor discount figure used in the MSM is not identified. Thus, for these and other reasons we explain below, we find the Verizon switching cost study preferable to the AT&T/WorldCom

¹⁶⁴ 47 C.F.R. § 51.505(b)(1).

¹⁶⁵ See AT&T/WorldCom Ex. 12, at 19.

¹⁶⁶ See *id.* at 15-16.

¹⁶⁷ See *infra* section V(A)(2).

¹⁶⁸ See *Inputs Order*, 14 FCC Rcd at 20282, para. 299; Verizon Switching Cost Brief at 7.

¹⁶⁹ Verizon Switching Cost Brief at 6.

¹⁷⁰ See *id.* at 3 (citing Tr. at 5129).

¹⁷¹ See *infra* section V(A)(1).

¹⁷² See *infra* section V(C)(1)(b).

switching cost study.¹⁷³

56. We also adopt the Verizon unbundled transport studies.¹⁷⁴ AT&T/WorldCom submit the MSM only for common transport, not dedicated transport.¹⁷⁵ Verizon, in contrast, submits cost studies for both.¹⁷⁶ AT&T/WorldCom, moreover, support the use of the Verizon dedicated transport study.¹⁷⁷ Both sides assume the use of the same forward-looking technology in their respective common transport studies, and both studies are transparent and permit the user to adjust the inputs.¹⁷⁸ With both studies satisfying the key criteria, we prefer the Verizon cost study because it calculates costs for common and dedicated transport using a consistent network design and consistent cost inputs.¹⁷⁹

57. Finally, although Verizon is correct that AT&T/WorldCom propose to utilize the MSM to generate rates for only a limited set of UNEs,¹⁸⁰ AT&T/WorldCom generally propose restating the rates generated by the Verizon cost models for other UNEs.¹⁸¹ Therefore, to the extent that only Verizon submitted a cost study for a particular UNE, we will rely on that study.¹⁸²

C. Cost of Capital

1. Overview

58. In the *Local Competition First Report and Order*, the Commission stated that the objective of a TELRIC pricing methodology is to set prices equal to those a firm would charge in

¹⁷³ See *infra* section V(A)(2). Because signaling is usually purchased only when a competitive LEC also purchases switching, we adopt the Verizon signaling cost study. See *id.*

¹⁷⁴ See *infra* section VI(A).

¹⁷⁵ Tr. at 5551, 5559-62, 5599; AT&T/WorldCom Initial Cost Brief at 188-89; see also AT&T/WorldCom Ex. 7 (Turner Direct) at 3; Verizon Initial Cost Brief at 173.

¹⁷⁶ Verizon Ex. 100P, Parts C-9 (common transport) and D-2 (dedicated transport) (confidential version); Verizon Ex. 107, at 212-221.

¹⁷⁷ AT&T/WorldCom Initial Cost Brief at 180, 188-89; see also Tr. at 5559-63, 5599.

¹⁷⁸ See *infra* section VI(A).

¹⁷⁹ See *infra* section VI(A)(2).

¹⁸⁰ See Verizon Initial Cost Brief at 137-78.

¹⁸¹ See AT&T/WorldCom Ex. 12, at 95-96.

¹⁸² See *infra* section IX.

a competitive market.¹⁸³ It decided that TELRIC includes a normal profit equal to the cost of capital.¹⁸⁴ The Commission stated that the “currently authorized rate of return at the federal or state level is a reasonable starting point,” and that incumbent LECs “bear the burden of demonstrating with specificity that the business risks they face providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital.”¹⁸⁵ The Commission went on to say that “[s]tates may adjust the cost of capital if a party demonstrates to a state commission that either a higher or lower cost of capital is warranted.”¹⁸⁶ The Supreme Court upheld the Commission’s treatment of cost of capital in its decision affirming the Commission’s TELRIC rules.¹⁸⁷

59. In the *Triennial Review Order*, the Commission clarified two aspects of the proper calculation of a cost of capital in a TELRIC proceeding. First, the Commission stated that a TELRIC-based cost of capital should be based on the same set of assumptions regarding technology and competition that are used to calculate network investment.¹⁸⁸ That is, TELRIC pricing is intended to replicate the rates in a market with facilities-based competition, and therefore the cost of capital should reflect the risk of losing customers to other facilities-based carriers.¹⁸⁹ Second, the Commission clarified that a TELRIC-based cost of capital should reflect any unique risks (above and beyond competitive risks) associated with new services that may be provided over certain types of facilities.¹⁹⁰ The Commission suggested that one mechanism for reflecting such risk would be the use of UNE-specific costs of capital.¹⁹¹

2. Theory/Policy Issues

60. The overall cost of capital is the minimum rate of return required to attract capital to an investment.¹⁹² It is the rate of return investors expect to receive from alternative

¹⁸³ See *Local Competition First Report and Order*, 11 FCC Rcd at 15846, para. 679 (“Adopting a pricing methodology based on forward-looking economic costs best replicates, to the extent possible, the conditions of a competitive market.”).

¹⁸⁴ *Id.* at 15854, paras. 699-700.

¹⁸⁵ *Id.* at 15856, para. 702.

¹⁸⁶ *Id.*

¹⁸⁷ See *Verizon v. FCC*, 535 U.S. at 517-22.

¹⁸⁸ See *Triennial Review Order*, paras. 680-82.

¹⁸⁹ *Id.*, para. 680.

¹⁹⁰ *Id.*, para. 683.

¹⁹¹ *Id.*

¹⁹² See A. LAWRENCE KOLBE, ET AL., *THE COST OF CAPITAL, ESTIMATING THE RATE OF RETURN FOR PUBLIC UTILITIES* 13 (1986).